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ABSTRACT

This unit, intended for grades four and five, focuses on houses and how they have influenced man and how man has influenced them. Among the 14 concepts discussed are the history of homes, home and the environment, homes and heritage, homes and human needs, the design of homes and available land. Besides the concepts, the unit includes behavioral objectives identified by concept, a pre- and post-test, teacher background information, and a suggested instructional sequence which includes a variety of related activities. A bibliography and film list are listed. (TK)

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ENVIRONMENTAL ECOLOGICAL EDUCATION PROJECT

Parkway School District
Chesterfield, Missouri

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TITLE III ESEA

Unit: Environmental and Architectural Influences on Homes

Revised June, 1972.

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ENVIRONMENTAL AND ARCHITECTURAL INFLUENCES ON HOMES

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FULFILLMENT

The man who built this house of mine
A hundred years ago
With Christian doors of smooth, clear pine
And chestnut timbers, row on row,
Whose oxen hauled the brick and lime,
Who squared the hearth's broad stone,
Could not foresee that Fate and Time
Would someday make it all my own.

Of course he knew that it would stay
Here, on its sturdy sills
Long after his last Spring should lay
Her fragrant mornings on the hills.
O even if he did not know
Just who its owners were to be,
I'll still maintain that, years ago,
He planned and built this house for me.

Frederick W. Branch

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SETTING

This unit contains the story of houses, how they have influenced man and how man has influenced them. People live in different kinds of houses for many reasons, but basically these differences occur because of man's environment, which includes climate (how he has to be sheltered from the elements), available building materials, and his life style.

Houses were not invented, but evolved as man himself did. The earliest homes were probably caves. At some time man discovered he could alter and enlarge his cave by piling stones into walls that extended from the cave entrance. He covered this space with a roof of sticks and animal hides. He then reasoned that, since he could provide the walls himself, he did not need a cave, and therefore expanded his available living area. Where caves were not provided by nature man built shelters from any available material: sticks, bark, skin, reeds, thatch, and straw. These shelters served a dual purpose--protection from the weather and from enemies, both animal and man. As man became more "civilized," so did his dwellings. From Egypt and Mesopotamia up through the present day, the houses people built have reflected tepees with the hides of the animals they hunted, as the ornate houses of the Victorian era matched the clothes, manners, and entertainment of the day, so today do the tall skyscrapers meet the needs of the people in our huge urban centers.

There are excellent reasons for learning about architecture. The purchase of a home is the largest single investment that most people make in their entire lives. Another reason is to develop an awareness of the aesthetic elements of architecture, to sharpen your perceptions of volumes, lines, spaces, colors, textures, and shapes.

Architecture evolves directly as civilization evolves. Where we find true serenity, dignity, and repose in our buildings, then also will we find these qualities in our lives. There is no such thing as a noble architecture without a noble race of people.

As Winston Churchill said, "We shape our buildings, then our buildings shape us."

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CONCEPTS

I. Man first built homes for shelter and protection from his environment.

II. The first homes were crudely built, utilizing readily available materials.

III. Man adapts his home to his environment.

IV. The homes in America reflect the heritage of the people.

V. As man had to spend less time on his basic needs for survival, he spent more time on the design of his house.

VI. The design of the home reflect the social pattern of the day.

VII. Homes are adpated to fit the needs of the people who live in them.

VIII. Several factors, such as the availability of building materials, the labor supply, and land, determine the cost of the home.

IX. The available land space determines the design of the home, such as the city dwelling, suburban, small town, and rural home.

X. Improved methods of transportation and communication have allowed people to live farther from their work and shopping.

XI. The goal of the architect is to achieve a feeling of unity, an overall order and purpose.

XII. Due to modern machinery, building materials, and education, man is specializing in improved home design.

XIII. We must be alert to new developments and active in

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selecting those ideas which may enable us to live usefully and happily: a challenge to our imagination and a necessity for our survival.

XIV. There are many careers related to the construction of homes today.

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BEHAVIORAL OBJECTIVES

By the time the unit dealing with homes is completed .....

Concept	Number	
I.	1.	Each student will be able to list in writing two reasons why man first built homes.
II.	2.	Each student will be able to hypothesize in a written sentence why the first homes were crudely built.
III.	3.	Eighty percent of the students will be able to list at least two differences between homes built in a high mountain region and those built in a desert area.
IV.	4.	Eighty percent of the students will be given four pictures of various styles of houses and be able to identify, in writing, which country or region they originally came from.
V.	5.	Eighty-five percent of the students, in a short written paragraph, will be able to explain why man could spend progressively more time on the design of the house.
VI.	6.	Eighty percent of the students, after comparing any two life styles and the accompanying design of the homes, will be able to explain in a written paragraph how these homes reflect the social pattern of that day.
VII.	7.	Each student will be able to hypothesize in writing why different people choose different house designs.
VIII.	8.	Each student will be able to list, in writing, at least three factors that affect the cost of a house and explain, in writing, how each factor does affect the cost.
IX.	9.	Eighty percent of the students will be able to explain in one or more written paragraphs what factors determine the differences between dwellings

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in a high-population density area and those found in an area with land space.

X. 10. Each student will be able to list at least two factors explaining why many people are able to live in an area where they neither work nor shop.

XI. 11. Eighty percent of the students will be able to write one sentence explaining the goal of an architect.

XII. 12. Eighty-five percent of the students will be able to list at least two factors that enable man to specialize in improved home design.

XIII. 13. Each student will be able to list in writing two new developments that will be useful in a home of the future.

XIV. 14. All children will be able to list at least three careers related to the building of homes.

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PRE-POST TEST

Related Behavioral Objective	Please follow all directions carefully.
1.	1. List in writing two reasons why man first built homes. a._____ b._____
2.	2. Write a sentence explaining why the first homes were crudely built.
3.	3. List at least two differences between homes built in a desert area and those built in a high mountain region. MOUNTAIN HOMES: 1. 2. 3. DESERT HOMES: 1. 2. 3.
4.	4. Study the following house styles. Identify the country from which the people who built them came. (houses on following page.) A_____ B_____ C_____ D_____
5.	5. Explain in a short written paragraph why man can now spend more time on the design of his house.

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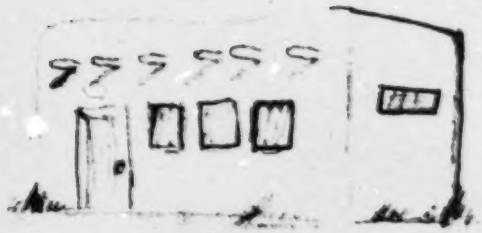
A

B



C.

D.

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6. 6. What do the nomes built between 1700-1900 tell us about the poeple living at that time?

7. 7. In not more than 25 words explain in writing why you think different people choose different house designs.

8. 8. List in writing three factors that affect the cost of a house. -Explain how each factor affects the cost.

a._____

b._____

c._____

9. 9. Explain what factors determine the differences between dwellings in an area where land space is scarce and an area with ample land space.

10. 10. List in writing two reasons why many people are able to live in an area where they neither work nor shop.

a._____

b._____

11. 11. In one or more written sentences explain the goal of an architect.

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12. 12. List in writing at least three factors that enable man to specialize in improved home design.

a._____

b._____

c._____

13. 13. List in writing two new developments you think will be useful in a home of the future.

a._____

b._____

14. 14. List in writing three careers related to the building of homes.

a._____

b._____

c._____

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ANSWERS TO PRE-POST TEST

1. a. climate
   b. enemies

2. Man's first homes were crudely built because they had few tools with which to work and used only the materials available in the area.

3.

MOUNTAIN	DESERT
1. very steep roof	1. flat roof
2. log construction	2. adobe brick

4. A. England
   B. Spain
   C. Holland
   D. France

5. Man can now spend more time on the design of his house because all of his time is not spent on his basic survival. We have specialists that will build our homes while we work at another job.

6. The homes built between 1700-1900 tell us about the social patterns of the day.

7. Different people choose different house designs because of their varying life styles and interests

8. a. land purchase
   b. labor cost
   c. building material

9. Students answers will vary as to the question asked.

10. a. mass production of cars
    b. rapid transit systems

11. The goal of an architect is to achieve a feeling of unity, an over-all order and purpose. He also wants homes that meet the needs of the families he serves.

12. a. Modern machinery
    b. new building materials
    c. education

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13. Examples of answers are:

a. solar heating systems
b. movable walls
c. plastic floors
d. artificial lawns

14. Examples of answers are:

a. architect
b. draftsman
c. mechanical engineer
d. contractor
e. landscaper
f. carpenter

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BACKGROUND INFORMATION

The goal of architecture is to design a building which encompasses grandeur, interest, beauty, unity, and power without sacrificing convenience. The problem that architecture sets out to solve is how best to enclose space for human occupancy.

The historic architectural styles came from distinct nations isolated by difficult and limited means of transportation and communication. Each was evolved by a segregated people, each had individual qualities, each it itself truly represented the society that developed it. Unlike the other arts, architecture rose from a primary requirement of human life, the need for shelter.

DEVELOPMENT OF ARCHITECTURE

The house as we know it today was not invented but evolved as man's life changed and he became more civilized. Man probably first learned that he could protect himself from enemies and inclement weather by taking shelter in a cave. In parts of the world where caves weren't available man began constructing crude shelters by piling branches in trees for tree houses, or by using animal skins, bark, straw and stones to contruct tents, huts, or other shelters.

Tree houses in the Philippines and Malaya provided protection from enemies because the ladders could be pulled up and no one could enter the houses. The same was true of the Pueblo Indians in the southwestern United States. Many of their homes were constructed without windows and had trap doors in the roofs.

The climate in the area dictated the type of construction of the houses. For example those found in a rain forest would be built on stilts with steep roofs to shed the rain.

In Egypt and Mesopotamia, where "civilization" began, man first produced houses that were more than crude shelters against the elements. For their first houses the peoples of

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these flood-washed lands turned to the handiest material, mud. They quickly discovered that mud was best as a building material when formed into blocks and left in the sun to bake to hardness, thus creating the brick. Because of the perpetual strong sun in these early lands, houses were constructed with either small and high or no outside windows. Because there was so little rain, roofs were left flat. The houses were built around a court which was the center of everyday life.

The design originated in Egypt and Mesopotamia predominated later in Greece, Rome and other parts of Europe. Some other materials used were palm ribs, papyrus stalks, and reeds. Although timber was a scarce commodity in the early days of these civilizations it was used occasionally. As the years passed, houses became more elaborate. They grew in size and plaster came into use as a covering for the mud-brick walls and was adorned with colored frescoes. Courts multiplied and became larger. The house, as a home, had come into being.

Ancient Greece, in spite of its Golden Age, contributed little to the evolution of the house. This apparent paradox is due to the fact that, for the Greeks, the house was of little importance. They spend virtually all their waking hours away from the home and therefore saw little reason to beautify it. Their attentions were instead spent on the public buildings in the city.

The Romans made two contributions to architecture: extensive use of the rounded arch and the invention of the tenement house.

When William the Conqueror became ruler of England he introduced a new kind of house: the castle. There had been castles for thousands of years, but they had been used exclusively for defense. The castles of William's day, although important as bases from which his lords could keep possession of England, were also the homes of the lords and their families. From the 11th century through the early part of the 14th century the castle was lived in far more than it was fought in. After gunpowder was introduced the castle was not nearly as impregnable as it had been and its military importance began to decline. Therefore the emphasis shifted to the residential rather than military function of the castle. Gradually the English manor house emerged. As time went on the manor house lost virtually all its similarities to the castle of old, even to the point where manor houses were often constructed

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of wood in those areas of England where stone was not readily available. During this period another housing development was taking place that, in the long run, affected more people and was more significant. This was the evolution of the twig-and-mud hut of the feudal peasant into the timber-and-plaster English town house for the middle class. Brick and tile were put to use in some areas, and lower floors were sometimes made of stone. But timber was the favorite building material. Houses were erected with timber skeletons exposed, the spaces between the beams being filled in with loose stonework and covered over with plaster. This was the prototype of the wood frame house which early English settlers built in America.

ARCHITECTURE IN AMERICA -- 1600 to 1800

At the time the first colonists settled America there were many different Indian tribes already here. Contrary to popular belief these Indians were not all warlike, savage hunters ever on the move through the wilderness. Many tribes were peaceful, stayed in one place, and developed skills in agriculture. These tribes did not all live in the same type of home. The Seminoles in hot Florida lived in open sheds roofed with thatch of palm leaves. In coastal Georgia, Irene Indians covered posts with clay and Spanish moss in making their huts. Some tribes in Nebraska dug rectangular pits for partially underground shelters, sometimes forty feet long. The cliff dwellers of the Southwest built on the summits of mesas or on shelves of the rock walls of canyons to take advantage of the natural protection. New England Indians often constructed two-family round or oblong wigwam houses made of arched poles covered with bark. The Pueblo Indians built windowless square cubicles made of adobe brick, layers of stone, and clay mortar which could be entered only through trap doors in the roofs. Typical Plains Indians hunted only the buffalo. They needed portable homes, quick to erect, quick to strike, and so the tepee evolved.

The first settlers who came to America from England built very primitive houses, little better than the wigwams and huts of the Indians, since all their time was spend acquiring their basic needs. These early settlers built several types of shelters. One was a frame of poles, arched to form a round roof and covered with skins or bark. Another type was built of vertical stakes driven into the ground and covered with a mixture of twigs and clay. Some colonists dug pits in the ground. Once the first few hard years had passed,

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however, the colonists began building more permanent houses. These were very much like the houses they had known at home in England. But differences appeared, dictated by the climate, the geography, the building materials available, and the ways of life that developed. These differences led to two developments in America's history of houses: the New England colonial home and the Southern colonial home.

The English in New England soon learned that the house styles they had brought from England were not sufficiently serviceable for the strong New England winds and severe cold. They covered the sides of their houses with long, narrow boards called clapboard. The English were accustomed to using wood for their homes and as late as 1700 a brick home in Massachusetts was pulled down because the people believed they weren't healthy to live in. The typical 17th century New England house, generally a Salt-box, had its broad side facing the road. The steeply pitched roof with triangular gables at each end was adapted to shedding snow.

The Cape Cod home developed later in the seventeenth century with similar construction. It had clapboard siding, a large central chimney, and small windows. It was a lower building - rising no more than one or one and a half stories.

The English homes in Virginia were quite different from those found in New England. Climate was a big factor. Brick came into use and because of much milder climate the chimneys were much smaller. Often there was a small chimney at each end of the building.

The Dutch who settled in New York in the early 1600's constructed, for the most part, the typical "Dutch Colonial" with masonry on the first story and clapboard or shingles under the gables, and a graceful gambrel roof.

The Dutch colonists were the first to use the stoep, better known as the stoop. They would make the stoep large enough for a bench to be placed on both sides. As time went on the stoop grew larger until it became a porch. The kitchens were large with neat cupboards and brick floors. It was said that you could walk into a Dutch house and never see a bed. This was because beds were built into the walls and covered over during the day with shutters of curtains.

At the same time the Dutch were erecting homes in New York, a new development was taking place in Delaware. In

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1638 Swedish immigrants brought from their country the idea of log cabins. The idea caught on quickly and was used by many frontier families. It began as a one-room building and later grew to a two- and even three-room house.

During the middle years of the 18th century the Colonial, or Georgian, home developed in all the colonies. By this time the colonies were no longer new or primitive and had become quite class conscious. In the 17th century most of the people in the colonies were tillers of the soil, small farmers. They lived simple lives and built simple houses. In the 18th century this was no longer true. Colonial America had its first aristocracy and the homes that were built reflected the feelings of this aristocracy. Houses became more formal, more dignified, more polished, more refined. The ceilings became higher, the wide central hall became almost universal, stairways became longer, less steep, more graceful. Windows became larger, front doors became elaborate center entrances, roofs became less steep.

During the same period the English settlers were accomplishing the change from Indian hut to Georgian mansion, other colonists, the Spanish in Florida and the Southwest and the French in Louisiana, were building houses which were to eventually become important parts of America's heritage.

A combination Indian-Spanish style developed in the Southwest. The Spanish planned to use the Indians as colonists to hold their land in Mexico and the southwestern United States, so they sent missionaries to convert them. The padres with help from the Indians, built mission complexes of stone or adobe brick much as the Indians had done. The walls were several feet thick with beams projected in front, much the same as in the pueblos. The buildings of the mission, like many of the buildings in Spain, were arranged around a courtyard. Often the missions were topped with half-cylinder-shaped tile like that used on roofs in Spain. Sometimes the thick, sun-dried brick walls were covered with plaster and then white washed. Haciendas were one story houses built with three rectangular wings around a patio.

The first houses built by the French in New Orleans were of beams split from cypress trees native to the area. The roofs, topped with palmetto thatch, were steep and projected widely out over the front, a protection against sun and rain.

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Claylike sand was used to make a soft brick which was laid with lime mortar. Because the brick was soft it was covered with plaster.

The early French plantation homes were entirely different. They were built to suit the location, climate, and available building material by having a basement of brick above the ground. The main living-level floor was above this basement and was constructed of cypress wood. Around three, or sometimes all four sides, of the main floor was a veranda opening out from all the rooms. Heavy square or round brick columns held up the floor. Slender wood posts extended from the veranda to support the curving hipped roof overhead. After 1766, when Spain took over Louisiana, houses began to show Spanish ideas and influences. They had two or more stories, the patio became more important, and wrought iron balconies appeared.

AMERICAN ARCHITECTURE -- 1800 to Present, and a forward look

America's first "fad" appeared in the early 1800's, coming all the way from ancient Greece. Like all houses, this style reflected life in its day. The Greek style was largely one of outward appearances. Columns of various classical types appeared all over the United States. With the columns came their accompaniments, the bases on which they stood, the toppings reaching to the roofs--all copies in minute detail from the ancient forms. Brick was hidden under plaster and flat paint. Clapboard was laid evenly and flush, so a stone appearance could be achieved.

The American Victorian Age appeared in America between 1850 and 1900. These were the days when people overdressed, studied books of etiquette, put on airs, and reflected this life style in their houses. This was an era of confusion in house building. There were houses with steep gables, with the aquarish mansard roof, houses built along the lines of Italian villas. Influences of the castles and cathedrals appeared. Homes had high, narrow, pointed windows, sections of sides jutting out in a three- or six-sided manner. Turrets and towers appeared on the sides of houses and cupolas loomed on rooftops. To this were added porches, piazzas, balconies, stained-glass windows, and trimmings all over the home. But the Victorian Age produced two lasting innovations: the skyscraper and the apartment house.

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Throughout the nineteenth century there were limits as to how high an apartment house could be built. The only support for each story was the story below it. The higher the construction, the thicker the support walls would need to be. Also most people would not walk up more than four or five flights of stairs to their apartments. With the development of the steel frame and passenger elevator these height limits became out dated. The coming of big apartment houses challenged architects to make the environment of the buildings personal and interesting.

Between 1900 and 1930 city after city doubled in population. At this time cars were being mass-produced, rapid transit systems and commuter railroads came into being, and the middle class followed the rich to the country, thus creating the suburb. During this period architects went back to the past for house-building inspiration. Climate, terrain, local historical heritage, and the needs of the family were ignored. Because of improved transporatation systems dependence on local building materials was eliminated. Style was all that mattered.

However, at this time a few men were designing radically new kinds of houses while most people were still building the old types. Around 1930 a very different type of house appeared, stripped of all non-essentials, bare of ornament, owing virtually nothing to the style of any previous period in history. A brand new construction materials was used, houses in which the walls did not bear the brunt of supporting the roof. Thus they could use an open plan, in which there were fewer interior walls, and room divisions were suggested rather than defined. Glass was an important ingredient, used not only for new kinds of windows, but for entire walls.

Contemporary house architecture covers an ever-widening variety of styles, but modern houses usually have certain principles in common. They are often flat-roofed, tend to have an open room plan, make more use of new building materials such as plastic, plywood, aluminum, in combination with stone, brick, woods, and other traditional materials. Thus building materials continue to be a prime architectural consideration. Architects make use of the latest innovations in science and technology. They tend to blend homes with their natural settings, to merge indoors with outdoors by means of glass walls, glass doors, patios, and gardens. The resulting houses are usually essentially simple with few frills. The strongest

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point of the modern home is efficiency. The contemporary home has become more and more established in America today.

In the future industrially-produced homes will be economical, efficient, safe, and beautiful. It is hoped that these homes will have the benefit of the finest architectural talent available.

Electronics will expand its contribution to our, daily living convenience and health by giant strides in lighting, air conditioning, television, and other form of communication.

No one can be sure what shape the homes of the future will take, but it will be interesting to find out.

There are many vocational opportunities open to people in the area of home building. Some of these are: architect, draftsman, mechanical engineer, landscaper, plumber, carpenter, painter, contractor, and interior decorator.

SUMMARY

Since the physical shape of our environment has such great effect upon the individual, we must utilize all means at our disposal to improve and extend the structure of our communities.

We build upon the accumulated experience of the past as we add our efforts for helping humanity.

Homes are built by hand, by factories, or by a combination of hand and factory. The handsome home is custom designed and custom built. The factory-produced home utilizes the advantages of the assembly line techniques. In combining these two systems, factory made components are brought to the job and assembled as a custom-built product. Naturally, the larger the components the greater the possible savings.

Architectural education emphasizes man's safety, comfort, convenience, and pleasure. It is intended to develop a specialist who serves society not as a luxury but a necessity.

Purposeful pattern is everywhere in nature and man will obtain his most fruitful results when he applies these natural principles to buildings.

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We must insist on beauty as an integral part of use. The spirit in man to seek beauty can enable him to reshape his physical environment better in the future.

We must remember that the nature of man is reflected in his buildings. There is no escaping the disconcerting fact that architecture mirrors society.

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INSTRUCTIONAL SEQUENCE

Administer pre-post test prior to introducing unit. Evaluate. Length of time spent on a lesson will be determined by the interest and ability of the class: therefore, a lesson plan may take more than one day.

Room Preparation

1. In order to stimulate interest in the unit prepare a bulletin board displaying pictures of various styles of homes.

2. Use one corner of the room for building models of homes or for displaying those built.

Suggested Materials

1. Graph paper
2. Reference books
3. Paper for wall mural
4. Table for construction of home models
5. Art paper
6. Rulers
7. Crayons and/or colored pencils
8. Scissors
9. India ink
10. Tempera paint

Lesson I. Topic: Introduction to Man's Early Homes (Concepts I & II)

A. Conduct a brief discussion of houses.

1. Why are they necessary?

2. Where did they come from?

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3. What types of houses do people live in?

B. Show pictures of man's first shelters. (See Data Sheet I.) Have students hypothesize as to why man first built shelters and why they took the form they had. Then provide for opportunity research to find the answers.

C. Discuss the students' hypotheses, especially in regards to how environment affected man's houses.

D. By observing the environment around the school and the natural materials that are available in the area, have the children design on paper the first crude shelter that man might have built in the area.

Lesson II. Topic: Caves to Castles and Their Adaptation to Man's Environment (Concept III).

A. Discuss how environment affects the design of a house.

B. The teacher should prepare an opaque projector lecture (or tape-record Data Sheet II, items 1 through 9) on the development of houses from caves to castles and how each adapted to man's environment. (See Data Sheet II.)

C. Each student will be given a certain environment and expected to design the type of house he thinks would most likely be found there. (Examples: a dry desert climate, a high mountain area, etc.) (See Data Sheet III, items a and b.)

D. Have each child defend his design before the class. (By the end of the lesson Behavioral Objective 5 should be completed.)

Lesson III. Topic: Early Settlers' Homes in America (Concept III).

A. Divide students into two groups. One is settling the southwestern desert and the other, Plymouth, Massachuttes. One of their first needs is shelter. Have each group research and plan the type of shelter they would build, keeping in mind climate availability of materials.

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B. Each group will compare the shelters they have designed.

Lesson IV. Topic: European Contributions to American Architecture (Concepts IV and V).

A. Discuss the progress of civilization, e.g., man needing to spend less time on survival and having more time to spend on planning and constructing his home because of division of labor.

B. Divide the students into five groups: the English in the South, the Dutch in New York, the French in Louisiana, the Spanish in the Southwest, and the English in New England. Each group will be given the following problem:

> You are now safely settled in your area and are able to spend less time on obtaining necessities of life and more on the luxuries. You decide you want a home that is more than just a crude shelter. What kind of home are you going to build? Keep in mind the climate, the available building materials, the skills required, and the country you came from.

Each group will then design a house to fit the area where they have settled.

C. Plan a mural of the United States displaying homes drawn by each student located in the appropriate areas on the map. One student from each group will present the group's home to the class. (A large outline map of the United States can be made by using an overhead projector. Yarn may be used to outline the map directly on the wall).

D. Children can be given a long-range assignment to construct at home a model of one of the house styles that has been studied. The models maybe displayed at the end of the study of this unit. Awards for 1st, 2nd, and 3rd place may be given. All children should receive recognition of some sort.

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Lesson V. Topic: How Different House Designs Developed (Concept VI) (See Teacher Resource Material for drawings related to Lesson V.)

A. Briefly discuss with the students their ideas as to why different people used different designs in building houses. Be sure they understand that the life style and culture of the people affected the design.

B. Give the following questions to the children. They should do research to find answers they do not know. (This could be done as a group activity.) Discuss all answers as a class.

In America, from the 1700's to the 1900's, several different types of architecture developed: Georgian, Greek revival, log cabin, salt box, Cape Cod, and Victorian. Answer the following questions about each style:

1. In what area or areas of the country was each style found? Why?

2. What made each house style unique?

3. What factors led to the development of each style?

4. Did the way people lived at the time have anything to do with the development of each style of home? Explain your answer.

C. Walk through the neighborhood and look for evidence of the influence these different house styles.

D. Plan a field trip to tour Eugene Field House, Sappington House, Henry Shaw's home, etc.

Lesson VI. Topic: Homes Are Adapted to Suit the Needs of the People (Concept VII).

A. Hand out worksheeps an a typical family's needs. (See Data Sheet IV.) After students have finished checking the chart, discuss various needs: why they are needed, what family activities lead to

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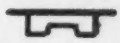
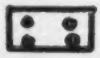
particular needs, how the needs of today are different from those of the past, and how the needs of each family may differ.

B. Play a scale game. Give students a small, simple picture. Instruct them to measure it off in squares of ½ inch. The squares should be numbered consecutively across the page. Give the children a piece of 1-inch graph paper and number the squares in the same manner. The children are now ready to transfer the small picture onto the graph paper by matching the lines in each corresponding square.

C. Have students measure the rooms of their homes and the over-all outside dimensions. Explain how this should be done because many children will not know how to measure the length and width of a room.

D. Give each student a sheet of graph paper and have him design, to scale a floor plan of a home to fit his family's needs. NOTE: Have children refer to the sizes of their rooms at home as a guide in planning this new home. The following symbols should be drawn on the chalkboard as a guide:

Fireplace 

kitchen stove 

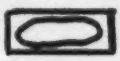
door

kitchen sink

bathroom stool

window

sink

tub 

Lesson VII. Topic: Factors Affecting the Cost of a Home (Concepts VIII and IX.)

The students will play the "Build a House" game. (See Data Sheet V.)

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Lesson VIII. Topic: How Transportation and Communication Affect Where People Live (Concept X.)

A. Discuss with the student how communication and transportation have enabled people to live where they neither work nor shop.

B. Initiate the discussion with the following questions:

1. Where is your home located?

2. Where does your father work?

3. Where does your mother shop?

4. Could this have been possible one hundred year ago?

Lesson IX. Topic: The Goal of the Architect and the Modernization of Home Design (Concepts XI, XII, and XIV.)

A. Discuss with the student the following questions:

1. What is an architect and what does he do?

2. Why do we need architects?

3. Are all homes designed by architects? Was yours?

4. How can a person become an architect?

B. Discuss with the children other occupations that are necessary for the construction of houses. List their suggestion on the board.

Activity: Have the children select one of the vocations they have listed on the board. Let them do research on various aspects of the occupation and then write a story describing the type of work done by what particular worker.

C. Discuss with the students recent developments in home construction including pre-fabs, mobile homes, pre-molded tubs, vinyl siding, use of plastics, etc.

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D. Suggested activity: Arrange a field trip to an architect's office. (If no parent is an architect or knows of one, phone The American Institute of Architects, 107 North Seventh, St. Louis at 621-3484, or contact the Parkway Resident Architects.)

Lesson X. Topic: Home of the Future. (Concept XIII)

A. Discuss with the students what they think the homes of the future might be like and why. Have children bring in as many illustration as possible.

B. Each student will construct a home of the future using materials available in the classroom and at home during a work period. Take a walk outdoors to collect useful material for the models.

Lesson XI. Pre-Post Test

A. Administer pre-post test to students.

B. Evaluate pre-post test and return to students.

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PRE-POST TEST

Related Behavioral Objective	Please follow all directions carefully.
1.	1. List in writing two reasons why man first built homes. a._____ b._____
2.	2. Write a sentence explaining why the first homes were crudely built.
3.	3. List at least two differences between homes built in a desert area and those built in a high mountain region. MOUNTAIN HOMES / DESERT HOMES 1. / 1. 2. / 2. 3. / 3.
4.	4. Study the following house styles. Identify the country from which the people who built them came. (houses on following page.) A_____ B_____ C_____ D_____
5.	5. Explain in a short written paragraph why man can now spend more time on the design of his house.

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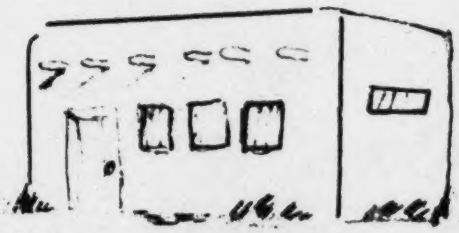
A

B



C.

D.

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6. 6. What do the homes built between 1700-1900 tell us about the poeple living at that time?

7. 7. In not more than 25 words explain in writing why you think different people choose different house designs.

8. 8. List in writing three factors that affect the cost of a house. Explain how each factor affects the cost.

a._____

b._____

c._____

9. 9. Explain what factors determine the differences between dwellings in an area where land space is scarce and an area with ample land space.

10. 10. List in writing two reasons why many people are able to live in an area where they neither work nor shop.

a._____

b._____

11. 11. In one or more written sentences explain the goal of an architect.

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12. 12. List in writing at least three factors that enable man to specialize in improved home design.

a._____

b._____

c._____

13. 13. List in writing two new developments you think will be useful in a home of the future.

a._____

b._____

14. 14. List in writing three careers related to the building of homes.

a._____

b._____

c._____

ANSWERS TO PRE-POST TEST

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1. a. climate
   b. enemies

2. Man's first homes were crudely built because they had few tools with which to work and used only the materials available in the area.

3.

MOUNTAIN	DESERT
1. very steep roof	1. flat roof
2. log construction	2. adobe brick

4. A. England
   B. Spain
   C. Holland
   D. France

5. Man can now spend more time on the design of his house because all of his time is not spent on his basic survival. We have specialists that will build our homes while we work at another job.

6. The homes built between 1700-1900 tell us about the social patterns of the day.

7. Different people choose different house designs because of their varying life styles and interests

8. a. land purchase
   b. labor cost
   c. building material

9. Students answers will vary as to the question asked.

10. a. mass production of cars
    b. rapid transit systems

11. The goal of an architect is to achieve a feeling of unity, an over-all order and purpose. He also wants homes that neet the needs of the families he serves.

12. a. Modern machinery
    b. new building materials
    c. education

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13. Examples of answers are:

a. solar heating systems
b. movable walls
c. plastic floors
d. artificial lawns

14. Examples of answers are:

a. architect
b. draftsman
c. mechanical engineer
d. contractor
e. landscaper
f. carpenter

School_____

Teacher_____

Unit_____

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Student post-test results will be grouped in the following manner:

Example:

Number of post-test questions given 14 .

Number of students	Number of questions answered correctly
6	12
5	10
8	9

Number of post-test questions given _____

Number of Students	Number of Questions Answered Correctly

Number of post-test questions given _____

Number of Students	Number of Questions Answered Correctly

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(Student)

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** Richard, Kenneth, Frank Lloyd Wright: People of Destiny.

* Books found in Henry School library. Other books could be substituted for the books on this list.

** St. Louis County Public Library

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(Teacher)

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FILMS

County Audio-Visual

1. Model Homes, B & W, 30 minutes, 1958. (Construction of models.)

2. A is for Architecture, Color, 30 minutes.

3. Homes Around the World, Color, 11 minutes, (discussion of climate)

St. Louis County Public Library

1. Frank Lloyd Wright, B & W, 30 minutes, 1958.

2. Home Place, B & W, 30 minutes, 1941.

3. Monument to a Dream, Color, 28 minutes, 1967 (building of the Gateway Arch)

4. Mount Vernon, B & W, 20 minutes, 1951.

5. Secrets of St. Louis, B & W, 1963.

6. The Town, B & W, 13 minutes, 1942. (European influences on American towns)

DATA SHEETS FOR STUDENTS

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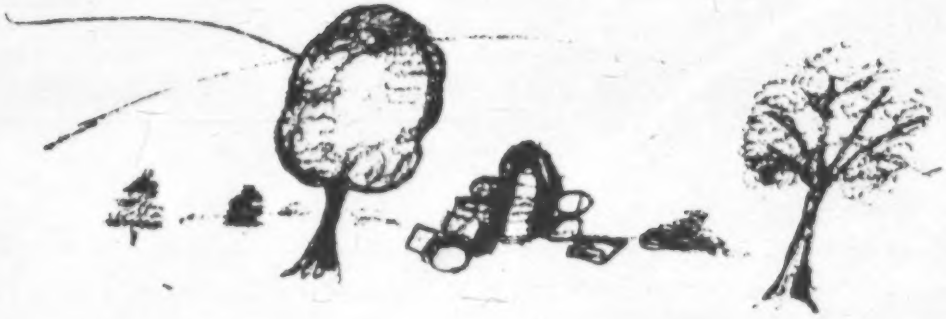
I. MAN'S EARLY HOMES



1. Cave

2. Tepee

3. Tree House

DATA SHEET II

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Script--Caves to castles and their adaptations to man's environment

1. In Egypt man first produced homes that were more than just the crude shelters we have just studied. These people had made great advances in agriculture, had developed as extensive import-export trade system, had produced works of art such as sculpture and paintings, and had created the pyramids, a construction task so monumental that engineers today do not know how it was done. The Eguptians' houses were adapted to their environment. Mud deposited by the Nile River's annual flooding provided the material, and the almost constantly shining sun provided the heat to bake it hard. The brick was born. Because of the steady sun some houses were constructed around a center court, had small and high outside windows, or sometimes no windows at all. The roofs were left flat because there was virtually no rainfall. Although mud was the most common building material, the Egyptians also used palm ribs, papyrus stalks, and reeds.

2. The Greeks contributed little to the development of the home. They spent most of their time in the public buildings and very little time at home. Therefore many homes were fairly crudely built of mud-brick around a central courtyard. The wealthier Greeks had well-built homes of stone. The wall that faced the street was blank except for the door. People did not want to look at the narrow, dirty streets. Because the winters were snowy and rainy the roofs of the Greek houses slanted to carry off the snow and rain. The public buildings built by Greeks were beautiful with elaborate columns.

3. The wealthier Romans built houses that were similar to the wealthy Greeks, but more elaborate. They still had blank front walls and were built around courtyards, but many also had tile roofs, shutters, sun porches, and decorative frescoes and mosaics. The main room, or atrium, often had an open rain-catch in the center of the ceiling, thus giving the impression of being half court, half room. Off this atrium there would be several rooms of minor importance and a master room.

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used for entertainment. Beyond this section would be the main garden court, surrounded by the bedrooms, dining room, sun room, game room, and lounge.

4. The castle, as a home, was begun by William the Conqueror when he became ruler of England. Before that, castles had been used for defense only. The typical castle was built of stone and surrounded by a thick wall with towers at regular intervals. Inside the wall was the keep, or main part of the castle, general three or four stories high. Smaller buildings were adjacent to the keep; a chapel, storehouses, and stables. The basement of the keep, housed the storage area for arms and provisions and the donjon, or jail. On the first floor were the garrison and administrative offices. The great hall, the center of everyday life, was on the next floor. There were also additional rooms for members of the lord's family and guests. The keep had narrow, high windows for protection.

5. After gunpowder was introduced in the 14th century, castles were not so easily defended, and more emphasis was placed on the living aspect. Gradually castles evolved into manor houses. At first they were built of stone, but later a combination of stone and wood or even all wood, was used. The floor plan was similar to that of the castles: the great hall in the center, the kitchen and pantry off to one side, and sitting rooms and sleeping quarters off to the other side. The windows, instead of being narrow and high, were low and large. Also developing at this time, and very similar to the manor houses, were the middle-class town houses. These were generally built of a wooden beam framework filled in with odd bits of loose stonework and then covered with plaster. The town houses were often three or four stories high, with the first floor used as a shop and the upper floors as living quarters.

6. Grass does not make a good building material for a cold climate. But if you cut out a piece of grass, roots and all, you have sod, and sod makes a good building material for a warm house. We find many sod houses, both in the Old World and the New. Our forefathers used sod to make temporary winter homes to keep them safe while winter roared across the plains. As their wagons rolled westward they saw that there were no trees at all. This

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meant that they could not build log houses, and their canvas-covered wagons were not warm enough to live in during the cold weather. They used the only material they could find: sod cut from the rich, grassy plains. First they dug down deep and then piled up the sod for walls. With the few boards they had, they made a roof support, or platform, and piled it with more sod. If they owned a section of stovepipe they stuck it through the roof to let the smoke from their cooking and heating fire excape. Some of these plains sod houses were dug down so deep that the family had to climb in and out of them. There were no windows and only one door. When the howling winter winds drove the snow into huge drifts over their sod houses, the settlers were safe and warm.

7. Many people live in mountain areas where snowfalls are heavy, winds are high, and snowslides. or avalanches, are not uncommon. These people build homes to suit their environment. The house is almost square so that no matter which way the wind blows, the pressure is about the same on any side it strikes. The way timbers are heavy and thick, and are locked together from outside. This helps the house withstand an avalanche. The roof is very low and wide, sticking out past the walls so the snow doesn't pile up against them. Shingles or heavy slabs of slate or stone cover the roof.

8. In the Southwest today, many people are making their homes of adobe brick in the Indian style. The Indians dug the clay our of their backyards and formed their own bricks. When the bricks were sun-baked they made the walls. Peeled cedar logs were laid across the walls to hold up the roof. The roof was flat on top. A finished adobe home is very plesant to live in. The thick walls keep out the heat in the summer and keep it inside in the winter.

9. In many areas of our country the climate is hot, humid and rainy. The New Orleans home is typical of homes for this type of climate. The basement is of brick, but is a veranda or porch, held up by heavy square or round brick columns. Slender wood posts extend from the veranda to support the curving hipped roof overhead. Builders can use the wood available in the area because that part of the house is above qround and will not rot.

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The porch on three or four sides, with doors opening off it, allows occupants to take advantage of any breeze.

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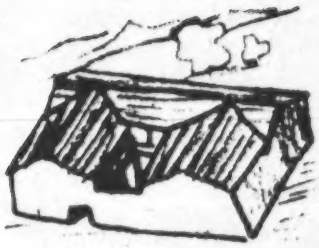
1. Early Egyptian Home



2. Greek House

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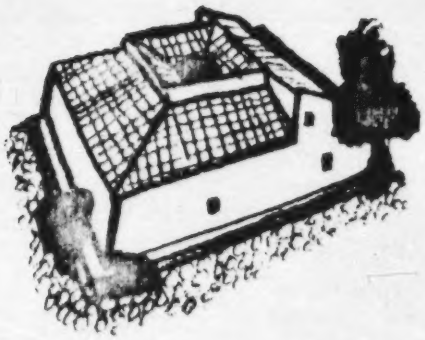
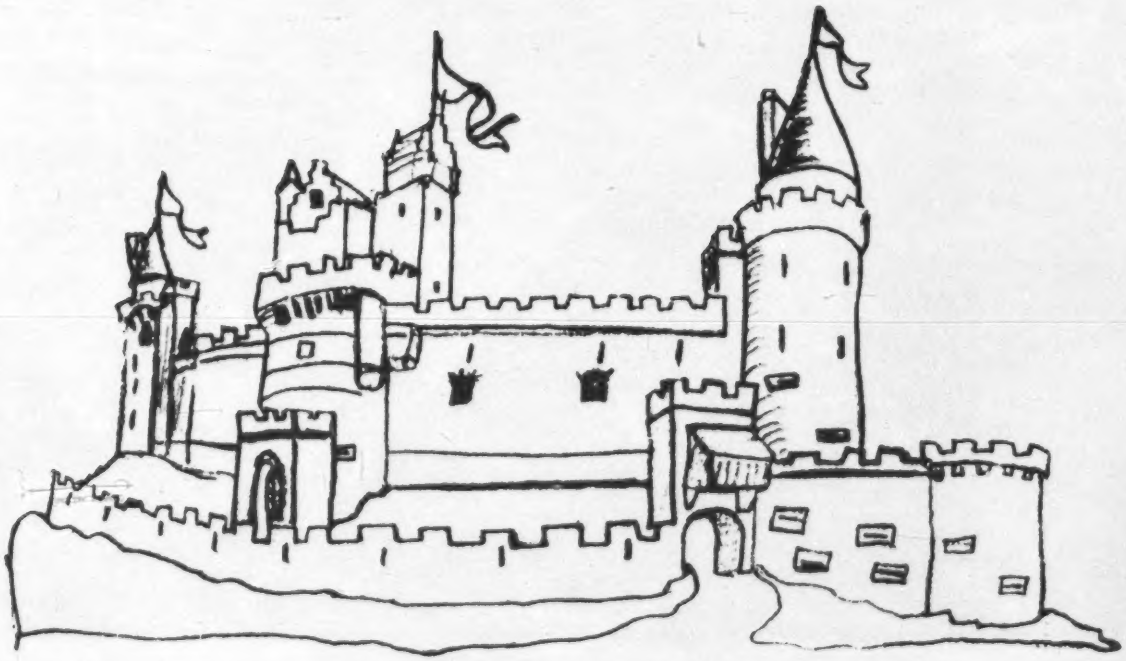


3. Roman House



4. Castle

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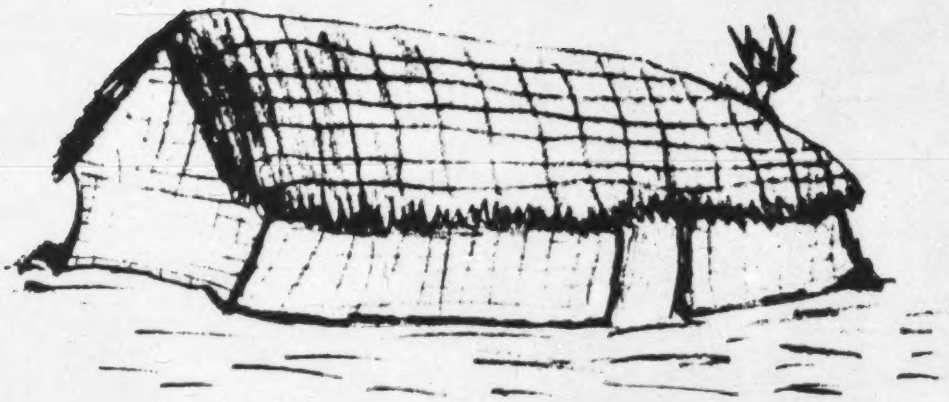
5. Manor House



6. Sod House

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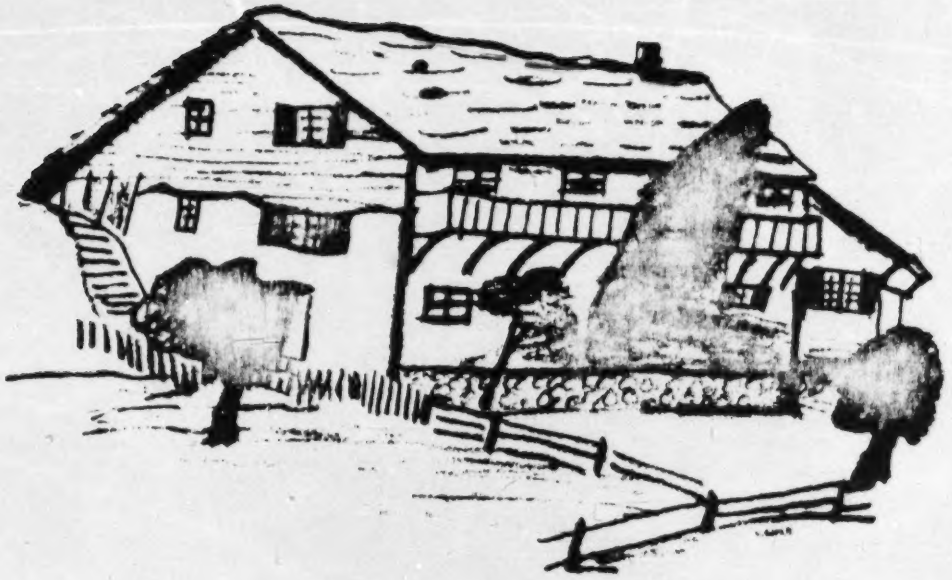
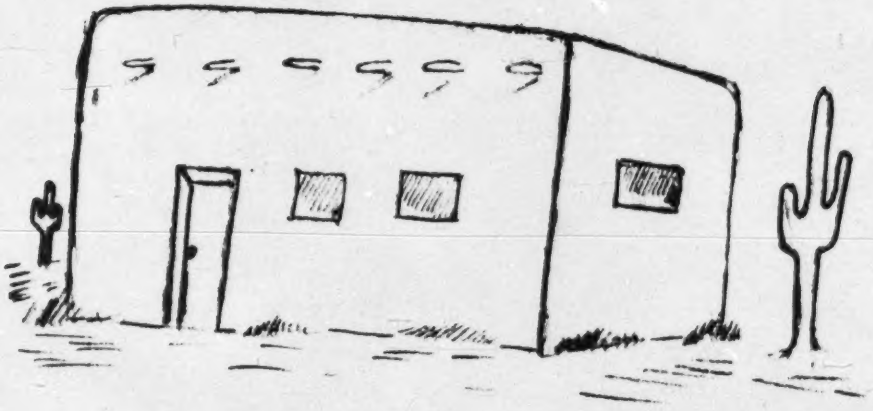


7. Swiss Chalet



8. Adobe Brick

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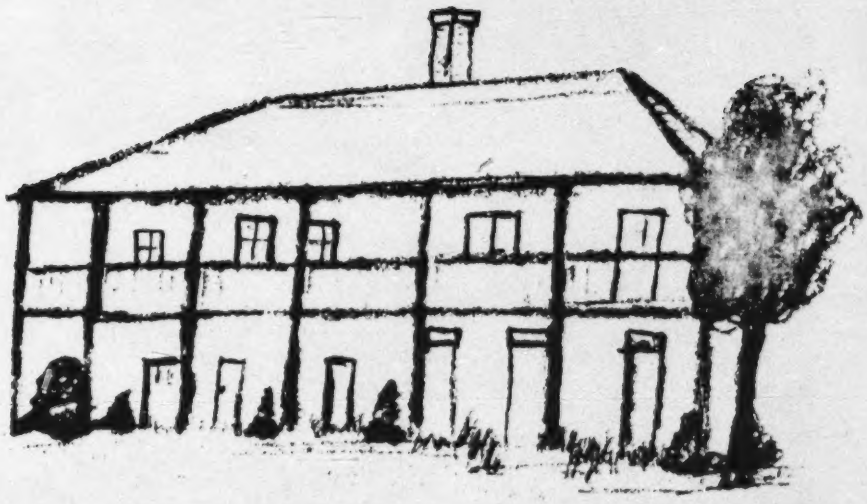

9. New Orleans French

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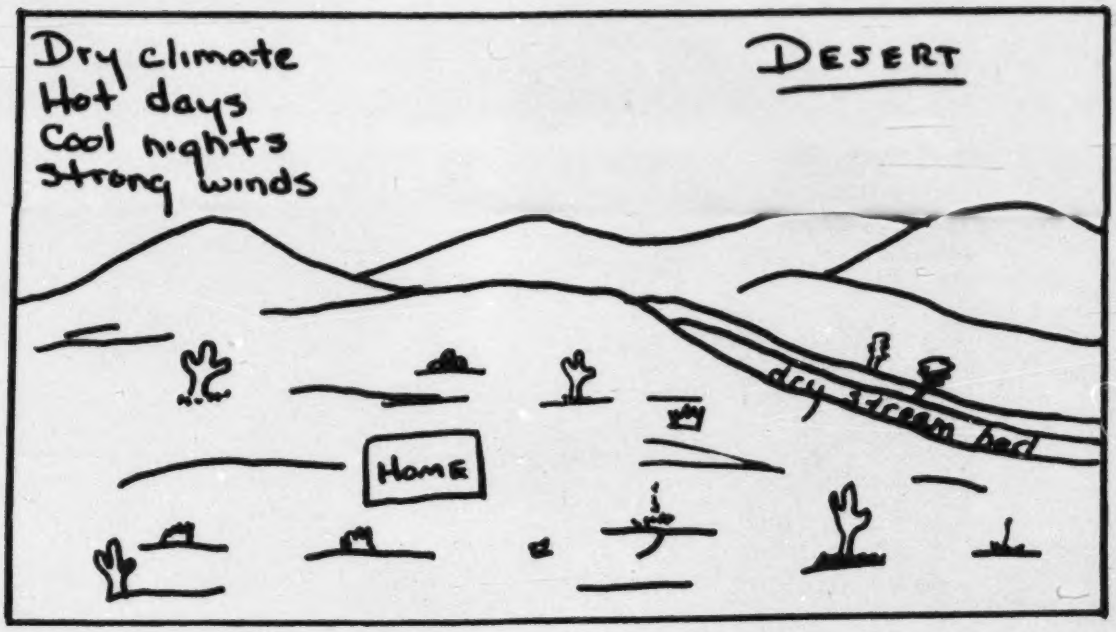
DATA SHEET III.



Draw a picture below of the type of home you would construct in this environment. Explain the materials you would use.

DATA SHEET

Draw a picture below of the type of home you would construct in this environment. Explain the materials you would use.

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NAME_____

DATA SHEET IV

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CHECK CHART OF FAMILY NEEDS

LOCATION PREFERENCE

_City
_Suburb
_Subdivision
_Country

TYPE OF HOME

_Apartment
_Ranch house
_Split-level
_Victorian
_Colonial
_Other

ROOM PREFERENCES

_Separate living room
_Separate dining room
_Living-dining room
_Kitchen with snack bar
_Family room
_Number of bedrooms
_Bed-sitting room
_Library
_Hobby room
_Utility room
_Other

REMARKS:

ENTERTAINING

_Buffet suppers
_Formal dinners
_Small dinners
_Backyard barbeques
_Teas
_Brunches
_Other

MEALS: WHERE SERVED

_At dining room table
_At snack bar in kitchen
_At kitchen table
_Elsewhere

WORKING HABITS

_Works at home
_Works occasionally at home
_Never works at home

LEISURE HABITS

_Painting
_Ceramics
_Gardening
_Woodworking
_Hi-fi
_Television
_Reading
_Sewing
_Photography
_Music: Piano
_Cards or games
_Others

SPORTS

_Golf
_Tennis
_Fishing
_Bowling
_Riding
_Sailing
_Dancing
_Skiing
_Other

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DATA SHEET

Instructions to the teacher: Build a House Game

This activity is designed to utilize the plans drawn by the students. Hand out the "Build a House" sheets to each student. Tell each student he has $30,000 to spend. Be sure the students understand:

1. The rules.
2. The meaning of each category.
3. That the costs are approximate.
4. What is necessary in their house (e.g., Electrical wiring is necessary in all rooms; plumbing only in kitchens and bathrooms.).
5. That they cay change their minds about the type of building material, land, etc., if they find they're spending too much money.
6. That many items are per room and they must multiply by the number of rooms to find the total cost.

Take the students for a walk in the neighborhood pointing out different types of building materials used.

After the children have completed computing the costs of their homes, have a discussion about the costs and about how the students had to modify their wishes.

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BUILD A HOUSE GAME

You will have $30,000 to spend. Using the following information you will build your house, using the plan you have just designed.

Rules

1. You may not spend more money than you have.

2. You must include all necessary items. (For example, you may not leave out plumbing or electricity, you must have a kitchen and a bathroom.)

3. You may subtract a room if you can prove it is necessary for your family's needs.

4. Lanscaping is necessary if you buy a house on land without trees, optional if the land has trees.

5. If you choose to live in the country you must determine the cost of land by multiplying the number of acres you want by $2500. This land price assumes that your rural home is located near a large city. Also, a rural home will need a septic tank and a well in addition to the other utilities.

COST OF CONSTRUCTING A HOME

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1. Land in desirable area

1/4 acre, without trees	$ 6,000
1/4 acre, wooded	8,000
1/4 acre, wooded on lake front	12,000
1/2 acre, without trees	12,000
1/2 acre, wooded on river bluff	16,000

Rural home site @$2500 per acre. Indicate acreage (____) and compute cost. $_____

2. Structure: $500 X number of rooms $_____

3. Exterior building materials

Brick	$300 X number of rooms	
Shingle	150 X number of rooms	
Frame	200 X number of rooms	
Stone	300 X number of rooms	
Brick and frame	250 X number of rooms	
Aluminum siding	200 X number of rooms	$_____

4. Roof

Cedar shingles	$200 X number of rooms	
Asphalt shingles	100 X number of rooms	$_____

5. Interior walls

Plaster	$60 X number of rooms	
Wallboard	40 X number of rooms	
Paneling	85 X number of rooms	$_____

6. Utilities

Electrical wiring	$120 X number of rooms	
Heating	240 X number of rooms	
Air-conditioning	160 X number of rooms	
Plumbing	450 X number of rooms	
Septic tank (rural)	$1000	
Well (rural)	2000	$_____

Total from first page $_____

COST OF CONSTRUCTING A HOME CONTINUED...

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7. Landscaping

Trees and shrubs:

1/4 acre, without trees	$300	
1/4 acre, wooded	100	
1/4 acre, wooded on lake front	100	
1/2 acre, without trees	600	
1/2 acre, wooded on river bluff	200	
Grass:		
1/4 acre sodded	300	
1/4 acre seeded	150	
1/2 acre sodded	600	
1/2 acre seeded	300	$_____

8. Extras

Fireplace(s)	$ 600	each
Patio or deck	600	
Swimming pool		
small	5,000	
large	8,000	
Garage		
1 car	750	
2 car	1,300	
Carport	300	
Screened-in porch	500	
Driveway		
Concrete	700	
Blacktop	500	
Gravel	100	$_____

GRAND TOTAL $_____

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A. Victorian

B. Saltbox

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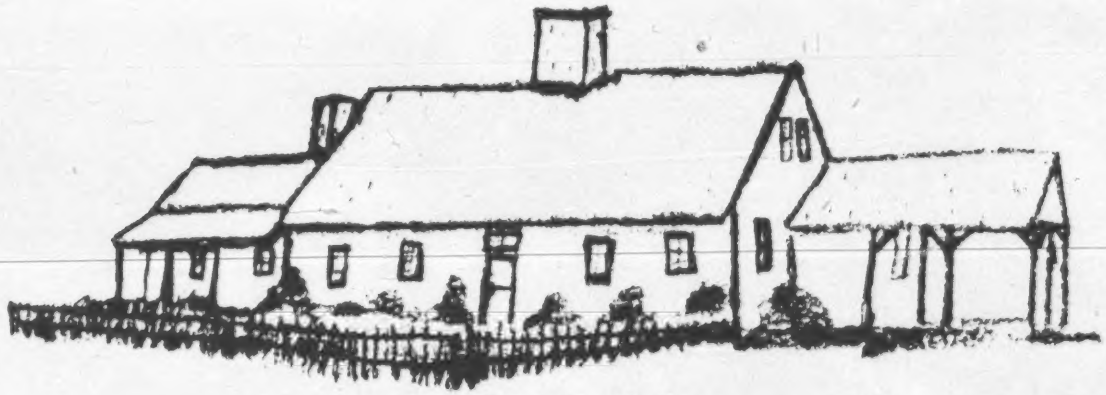
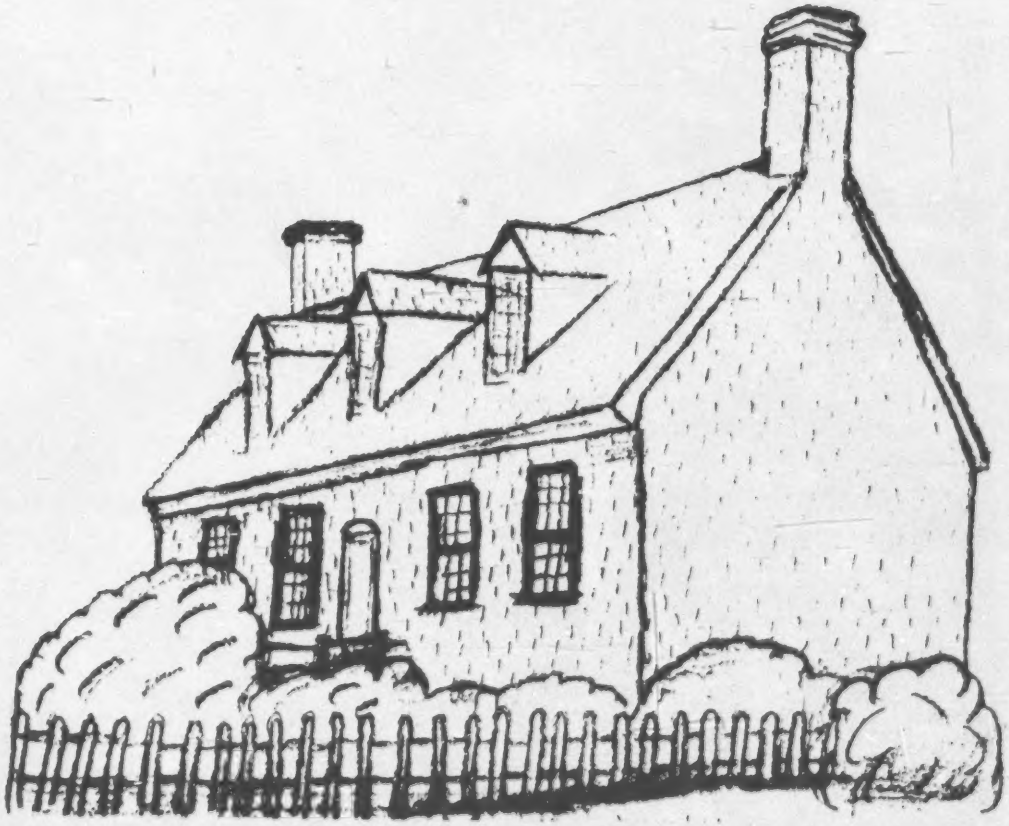


C. Cape Cod



D. 17th Century Virginia

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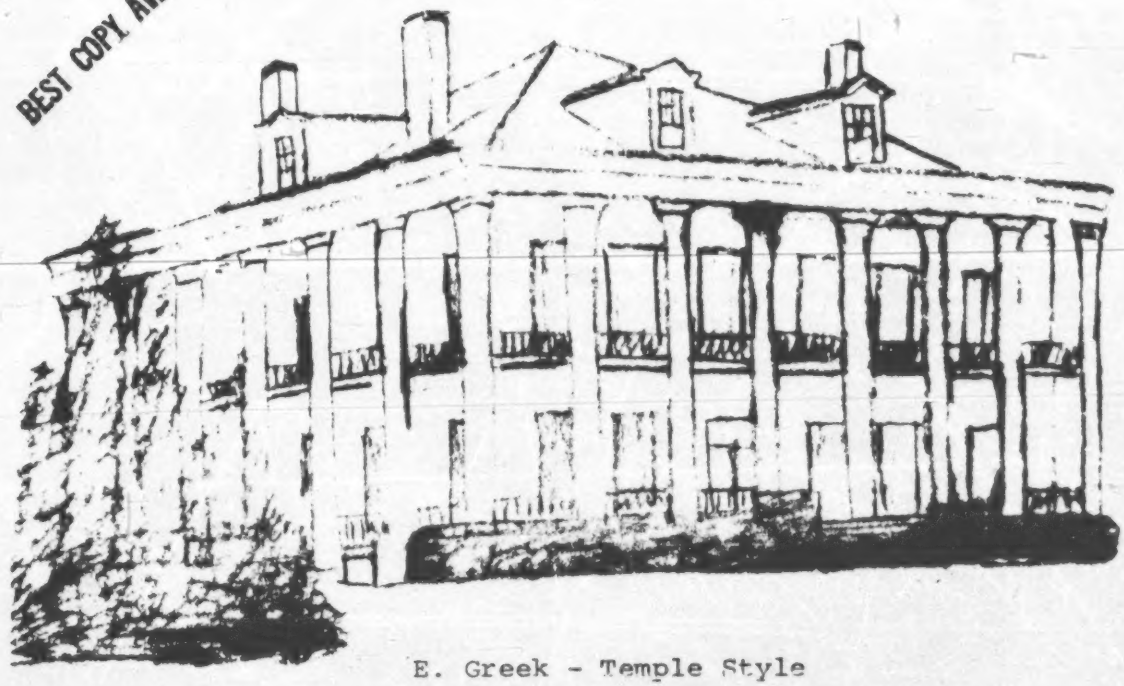
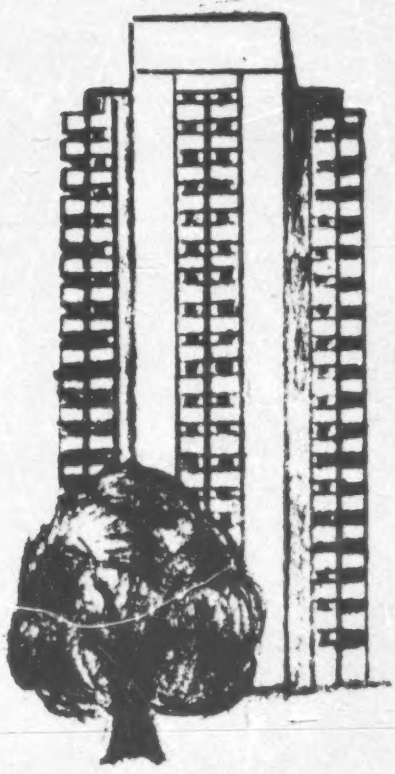


E. Greek - Temple Style



F. Apartment

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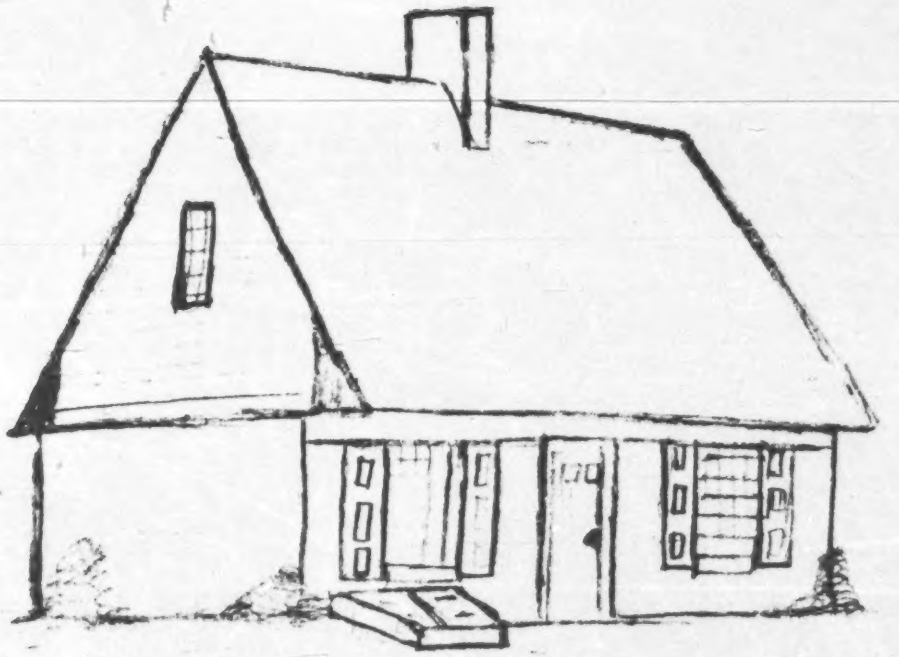

G. Dutch House

SUPPLYMENTARY ACTIVITIES

1. Write a poem.
2. Construct one of the following:
   a. Adobe brick house
   b. Pueblo house
   c. Sod house
   d. Igloo
   e. Tepee
   f. Log cabin
   g. Swazi hut
   h. Cave dwelling
   i. Subdivision
   j. Castle
3. Write a story about your life in one of the above homes.
4. Find songs that have been composed about the above homes.
5. Draw a picture of your own home and state style.
6. See the E.E.E. unit on The Changing Scene for a house tour.

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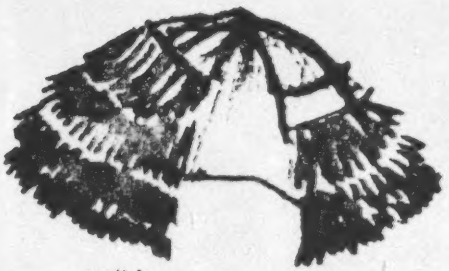
CONSTRUCTION OF A SWAZI HUT

Materials needed: Tall, dry grass
Green twigs or reeds
String

Procedure:

1. Construct twig or reed framework. See diagram #1.
2. Use bottoms of long grass stems and weave in between framework.
3. To thatch the roof, gather thin grass between thumb and forefinger and tie in a little bundle. Make several bundles. See diagram #2.
4. Trim all bundles the same length. See diagram #3.
5. Lay a row of grass bundles of roof frame and tie in place with narrow ends forming point of roof. See diagram #4.
6. The next row of bundles should overlap the first. Continue to the point of the roof.
7. Pour water from a water sprinkler over your house to see if it is waterproof.



More information can be found in A World Full of Homes, by William A. Burns, McGraw Hill, New York, 1953.

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CONSTRUCTION OF AN ADOBE BRICK HOUSE

Materials needed:
- Clay from a creek bank
- Grass cut in small pieces
- Smooth sticks the length of a new pencil
- Fine twigs

Procedure:

1. Mix clay with grass in a large bowl
2. Add enough water so clay can be patted into little bricks.
3. Dry in the sun.
4. When dry, construct walls.
5. Place sticks across top for rafters.
6. Carefully place small twigs across rafters and cover with a thick coating of mud.

This completes your Pueblo Indian home.

CONSTRUCTION OF AN EARLY EGYPTIAN HOUSE

Build a little flight of steps of to the roof of the Pueblo Indian home.

CONSTRUCTION OF A FIVE-STORY PUEBLO

1. Have several children work together and make a five-story Pueblo home.
2. Add ladders.

More information can be found in A World Full of Homes, by William A. Burns, McGraw Hill, New York, 1953.